

IN THE CLAIMS

Please amend the claims as indicated.

1. (Currently Amended) An air distribution system for a forced hot air drying unit for drying inks, paints or coatings comprising of:

a housing having at least one orifice chamber, an inlet cavity, a baffle, air passages, a ~~single or multiple orifice chamber(s)~~, and a series of orifices allowing air to pass from ~~the~~ said orifice chamber ~~chamber(s)~~ to the exterior of ~~the~~ said housing of ~~the~~ said air distribution ~~system~~ system, said baffle arranged to distribute air from said inlet cavity to said air passages, said series of orifices sized to provide an air impingement on a substrate to be dried;

an internal construction capable of accepting an electrical heater which allows heat to be efficiently conveyed from ~~the~~ said electrical heater through ~~the~~ said internal construction to the air as the air passes from ~~the~~ said baffle to ~~the~~ said orifices; ~~orifices.~~

~~a said~~ an electrical heater mounted within ~~the~~ said internal construction of ~~the~~ said housing of ~~the~~ said air distribution system.

2. (Currently Amended) A forced hot air drying unit for drying inks, paints ~~and or~~ coatings where all dryer components are located in a single enclosure comprising of:

a means for receiving pressurized ~~air~~ air;

a means for receiving electrical ~~power~~ power;

~~single or multiple air distribution system(s)~~ a plurality of air distribution systems mounted within said single enclosure, that receive, heat, and disperse wherein each distribution system is connected to said means for receiving pressurized air and said means for receiving electrical power, wherein each distribution system receives, heats, and disperses the said pressurized air;

a means of controlling the flow of the said pressurized air passing through ~~the said air distribution system(s)~~ systems, ~~the preferred controlling means~~ including an air flow regulator.

a means of controlling the temperature of the air passing through ~~the said~~ air distribution system(s), ~~the preferred means~~ including a modulating power electronic temperature controller.

3. (Currently Amended) A means of monitoring the effective temperature of a forced hot air drying unit for drying inks, paints ~~of~~ or coatings comprising of:

a thermocouple mounted to a thermal conducting slide plate in contact ~~or supporting with~~ the materials being dried; ~~dried~~.

the thermocouple mounted in a location where the material being dried has already been exposed to the majority of the resident time of the drying unit; ~~unit~~.

the thermocouple being capable of attaining the temperature of the material being dried.

4. (Currently Amended) The ~~dryer~~ air distribution system of claim 1 in which said heater comprises ~~of~~ a solid cartridge ~~type~~ heater that ~~may vary in~~ comprises a selectable material composition, diameter, length and wattage.

5. (Canceled)

6. (Currently Amended) An air distribution system for a forced hot air drying unit for drying inks, paints or coatings comprising of:

a housing with an air inlet port to allow air to enter ~~the~~ said housing, an internal cavity, and a plurality of orifices formed through a wall of said housing to allow air to pass from ~~the~~ said internal cavity to the exterior of ~~the~~ said ~~housing~~ housing;

a heater mounted within ~~the~~ said internal cavity of ~~the~~ said housing; and
a baffle within said internal cavity for distributing air along the length of said heater.

7. (New) An air distribution system according to claim 1, wherein said baffle comprises a plurality of baffle orifices spaced apart along a length thereof.

8. (New) An air distribution system according to claim 7, wherein said baffle orifices are variably sized to ensure an even air flow along the length of the air passages.

9. (New) An air distribution system according to claim 8, wherein said electrical heater comprises a solid cartridge heater.

10. (New) An air distribution system according to claim 1, wherein said electrical heater comprises a solid cartridge heater.

11. (New) An air distribution system according to claim 1, wherein said internal construction comprises a serpentine structure that defines said air passages and provides an extended heat transfer surface between said heater and said air passages.

12. (New) An air distribution system according to claim 1, wherein said baffle comprises a plurality of baffle orifices spaced apart along a length thereof; wherein said electrical heater comprises a solid cartridge heater; wherein said internal construction comprises a serpentine structure that defines said air passages and provides an extended heat transfer surface between said heater and said air passages.

13. (New) An air distribution system according to claim 12, wherein said solid cartridge heater is elongated along an axis and said air passages are arranged such that a flow of air through said air passages is in a substantially perpendicular direction to said axis.

14. (New) A forced hot air drying unit according to claim 2, wherein each said air distribution system comprises an elongated housing having an air inlet, an air outlet in the form of a plurality of orifices oriented for directing air onto a substrate to be dried, and at least one air passage between said air inlet and said air outlet; and

a solid cartridge electrical heater within said housing.

15. (New) A forced hot air drying unit according to claim 14, comprising a heat exchanger having a central channel for receiving said solid cartridge heater and an extended heat transfer surface comprising fins that in part define said at least one air passage.

16. (New) A forced hot air drying unit according to claim 14, comprising an extended heat transfer surface between said solid cartridge heater and said at least one air passage, and wherein said housing air inlets of said plurality of air distribution systems are connected by a manifold within said single enclosure, said single enclosure having a single air inlet connection connected to said manifold.

17. (New) An air distribution system according to claim 6, wherein said baffle comprises a plurality of baffle orifices spaced apart along a length thereof.

18. (New) An air distribution system according to claim 17, wherein said baffle orifices are variably sized to ensure an even air flow along the length of the air passages.

19. (New) An air distribution system according to claim 6, wherein said heater comprises a solid cartridge electrical heater.

20. (New) An air distribution system according to claim 6, wherein said internal cavity forms a serpentine structure that defines at least one air passage between said inlet port and said orifices and provides an extended heat transfer surface between said heater and said air passage.